

**WATER-BASED ACRYLIC EMULSION DISPERSANTS UTILIZED AS
GRIND RESINS FOR PIGMENTS AND METHOD OF PREPARING THE
SAME**

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ABSTRACT

The present invention is directed to a water-based acrylic emulsion dispersant to be used as a grind resin to incorporate inorganic pigment into a pigment dispersion for a coating composition. The acrylic emulsion dispersant is the reaction product of butyl methacrylate, butyl acrylate, styrene, methyl ether polyethylene glycol methacrylate, polyethylene glycol methacrylate, and polyphosphoric acid. The present invention is also directed to a method of preparing the acrylic emulsion dispersant. In this method, the butyl methacrylate, butyl acrylate, and styrene are combined with water to establish a first reaction blend. Similarly, the methyl ether polyethylene glycol methacrylate and the polyethylene glycol methacrylate are combined with water to establish a second reaction blend. Next, the first and second reaction blends are polymerized to form an intermediate emulsion polymer containing a hydroxyl group from the functionality of the polyethylene glycol methacrylate. Finally, the hydroxyl group from the polyethylene glycol methacrylate is reacted with polyphosphoric acid to form the acrylic emulsion dispersant which is utilized for efficient wetting and grinding of the pigment.